



## NEX10™ SERIES

R180

**Contents**

**NEX10™**

Introduction ..... 1-4

Characteristics ..... 1-5

Plugs and jack ..... 1-6 to 1-7

Accessories and tools ..... 1-7

Between series adapters ..... 1-8 to 1-9

Panel drilling ..... 1-10

**SECTION 1 TABLE OF CONTENTS**

## Introduction

Radiall's NEX10™ series is a miniature and lightweight RF coaxial connector with excellent intermodulation performance for outdoor telecom applications up to 20 GHz. To develop this solution, Radiall partnered with two leading RF connector manufacturers to develop NEX10™ - a new compact extremely robust Low PIM connector.

NEX10™ is the perfect solution for customers' requiring new generation equipment in the Telecom market that combines top performance with exceptional benefits and features.

To meet the performance needs of customers NEX10™ offers exceptional performance up to 20 GHz and also features a compact design which is 50% smaller than 4.3-10. This unique solution also offers separation of electrical and mechanical reference planes, which maximizes intermodulation performance under static and dynamic vibrations and torque stress conditions.

NEX10™ is available in multiple configurations:

- Jack: square flange, bulkhead
- Plug: straight & right angle
- Screw-on & push-pull coupling mechanism
- Multi coax
- Additional boot
- Jumper

## FEATURES & BENEFITS

- Robust design for outdoor usage
- Low PIM, independent of applied torque
- Multiple coupling mechanism of push-pull and torque
- RF shielding
- Optimized for 1/4" superflexible corrugated and smaller flexible cables
- 12.7mm minimum flange height
- Contact areas protected from damage

## APPLICATIONS

- Small Cell and MIMO
- DAS/In-building
- Antennas, radios and filter output
- Outdoor and indoor
- Applications requiring PIM stability in a compact size
- Multi-coax/Blind mate applications



## Characteristics

	Values / Remarks
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## ELECTRICAL CHARACTERISTICS

Impedance	50Ω			
Frequency	DC - 20 GHz			
PIM (passive intermodulation)	-166 dBc, 2x43 & 2x40 dBm (static and dynamic)			
Power	100W @ 2GHz @ 85°C 50W @ 2GHz @ 105°C 250W @ 2GHz @ 25°C			
Return loss (typical)	DC-4 GHz	4-6 GHz	6-10 GHz	10-20 GHz
	≥ 36 dB	≥ 34 dB	≥ 30 dB	≥ 20 dB
Screening effectiveness • DC to 6 GHz (torque type) • DC to 3 GHz (push-pull) • 3 to 6 GHz (push-pull)	- 110 dB typical - 90 dB typical - 70 dB typical			
Lightning protection • Center conductor • Outer conductor	±1 kA 10/350 μs pulse and ±4 kA 8/20 μs pulse ±1 kA 10/350 μs pulse and ±4 kA 8/20 μs pulse			
Contact resistance	Center contact 2.0 mΩ Outer contact 1.0 mΩ			
Voltage	Operating voltage: 1kV Breakdown voltage: 3kV			

## MECHANICAL CHARACTERISTICS

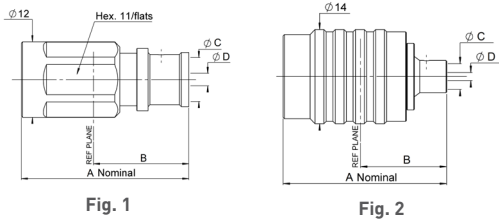
Coupling mechanisms	Torque, Push-Pull			
Durability (mating cycles)	100 min. 500 for test and measurement types			
Boot protection	Designated area for sealing			
Mating characteristics • Quick-lock - Engagement force - Disengagement force • Screw - Recommended torque	50 N typical 35 N typical  1.5Nm (Maximum 5Nm)			
Interface retention force	Quick-lock: 150 N min. Screw: 500 N min.			
Cable size diameter	Optimized for cables upto 1/4"			
Bending force	5Nm			

## ENVIRONMENTAL CHARACTERISTICS

Temperature range	-55°C/+125°C			
Corrosion	48 hours salt mist test			
Interface ingress protection	IP68 (24hrs, 1m, room temp, mated pair)			
RoHS	Compliant			

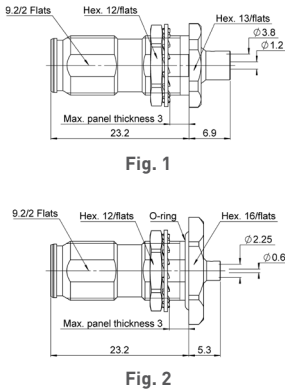
Plugs and Jacks

STRAIGHT PLUG SOLDER TYPE



Cable group	Cable group dia.	Part number	Fig.	Dimensions				Finish	Coupling mechanism
				A	B	C	D		
RG402	.141	R180 052 007	1	24.3	12.8	3.8	1.2	Silver + BBR	Screw-on
		R180 052 017	2						Push-pull
HCF 1/4" Cu2YAICu	1/4" superflexible corrugated	R180 060 007	2	26.7	15.2	7	2		Push-pull
		R180 060 017	1						Screw-on

BULKHEAD JACKS



Cable group	Cable group dia.	Part number	Fig.	Finish	Panel drilling	Note
RG402	.141	R180 300 007	1	Silver + BBR	P03	Solder
KS1 / RG405	.085	R180 301 007	2			

Jacks

FLANGE JACKS

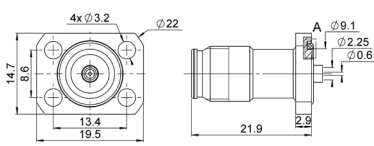


Fig. 1

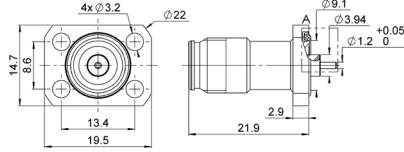


Fig. 2

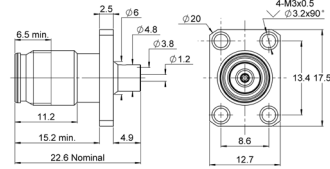



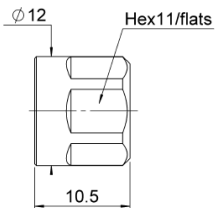


Fig. 3

Cable group	Cable group dia.	Part number	Fig.	Finish	Panel drilling	Note	
-	-	R180 540 007		1	P01	Pin dia 1.2	
KS1 / RG405	.085	R180 415 007		2		P02	Solder
RG402	.141	R180 252 007		3			

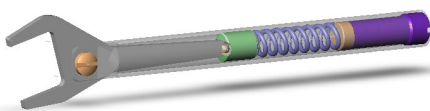
Accessories and Tools

PROTECTIVE CAPS




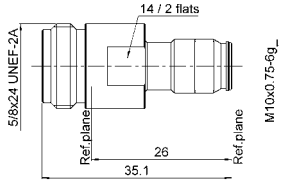

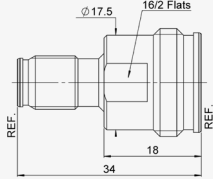

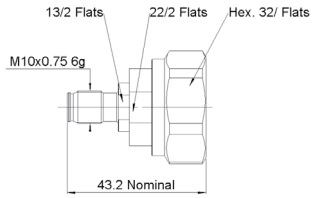

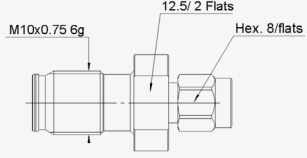
Part number	Coupling mechanism	Note	Material
R180 805 010	Screw-on	IP67	ABS
R180 805 007			Metal

TOOLS




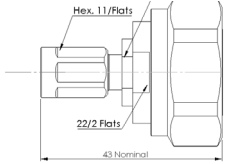

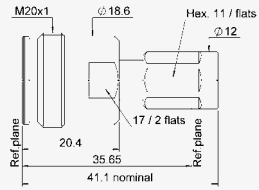

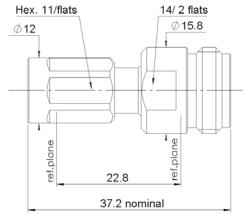

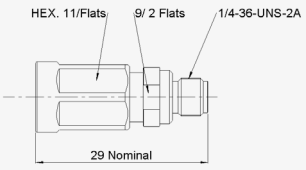

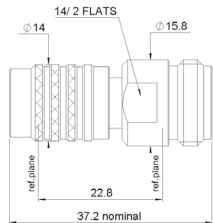
Part number	Description	Across flats D (mm)
R282 303 050	Torque wrench 1.5N.m	11

Between Series Adapters

Part number		Interface 1	Interface 2	2D Shape
R191 620 027		NEX10™ Jack female	N Jack female	
R191 620 037			IP67 4.3-10 Jack female	
R191 620 017			7/16 Plug male	
R191 621 017			SMA 3.5 Plug male	

Between Series Adapters

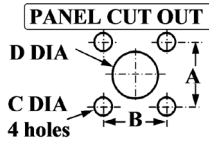
NEX10™

Part number	Interface 1	Interface 2	2D Shape	
R191 631 007		7/16 Plug male		
R191 620 047		NEX10™ Screw Plug male		
R191 630 007			N Jack female	
R191 621 007			SMA 3.5 Jack female	
R191 620 007			NEX10™ Push-pull Plug male	
			N Jack female	



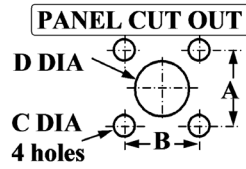
Panel Drilling

P01



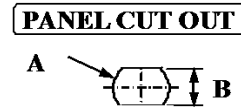
	mm		inch	
	Maxi	mini	Maxi	mini
A	8.65	8.55	0.340	0.336
B	13.45	13.35	0.529	0.525
C	3.3	3.2	0.129	0.078
D	4.2	4.1	0.165	0.161

P02



	mm		inch	
	Maxi	mini	Maxi	mini
A	8.65	8.55	0.34	0.336
B	13.45	13.35	0.529	0.525
C	3.3	3.2	0.129	0.125
D	7.3	7.2	0.287	0.283

P03



	mm		inch	
	Maxi	mini	Maxi	mini
A	10.1	10	0.397	0.393
B	9.3	9.2	0.366	0.362